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SECONDARY AGRICULTURAL SCHOOLS
IN RUSSIA

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LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, January 12, 1916.

SIR: The extension of agricultural education in this country and the desire to make instruction in agriculture at the same time more practical and also more cultural give special interest to accounts of the organization, courses of study, and methods of instruction in agricultural schools in other countries. I therefore recommend that the accompanying brief account of secondary agricultural schools in Russia be published as a bulletin of the Bureau of Education. This account has been prepared by W. S. Jesien, translator of Slavic languages in this bureau.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

THE SECRETARY OF THE INTERIOR.

SECONDARY AGRICULTURAL SCHOOLS IN RUSSIA.

INTRODUCTION.

In a country where 80 per cent of the people are engaged in farming it is but natural to expect that the agricultural schools should play an important part in the general system of education. The methods of farming employed by the Russian peasant are very primitive, and one of the gravest concerns of the Russian Government is the low productivity of farming, owing to the crude methods of cultivation generally in use.

The Russian peasant, contrary to what might be expected from the enormous area and sparse population of the Empire, is generally a small farmer. All the farming land in European Russia is already either in private hands or under Government reservation, and the only part open to settlement is in distant Siberia, famous for blinding snowstorms, howling wolves, and fierce Mongolian tribes, but comprising very fertile areas.

In order to subsist on his small farm the peasant must employ the modern methods of intensive farming. The urgency of this question is emphasized by terrible famines that affect one or several agricultural districts of Russia almost every year.

To promote the adoption of modern methods of farming by the peasants the Government, aided by provincial authorities, communal organizations, and educational societies, exercises ever increasing activity. Agricultural banks, offering the small farmers an easy and low interest credit, have been established in all the farming districts. Agricultural machines are rented to the peasants, and grain elevators and agricultural stores are supplied in all parts of the country.

Experimental fields where the peasants can observe the results obtained by better methods of cultivation are maintained in numerous districts of the Empire, and agricultural experts are stationed throughout the country to advise the peasants in all matters pertaining to cultivation. Popular lectures on agriculture and related subjects are also arranged in villages, and the lecturers often travel over a wide stretch of country. As a distinctive factor in the technical development of agriculture in Russia should be mentioned the large

modern farming estates, whose methods are extensively imitated by the peasants.

In this movement an important part is performed by the "zemstvos," bodies exercising local self-government. The zemstvos are composed almost exclusively of representatives of land-owning nobility and peasants. They impose local taxes not to exceed 3 per cent of the annual value of the real property in the district, and, having very small administrative expenses, turn back to the population most of the money received in the form of educational and welfare activity. The total sum expended by the zemstvos for agricultural development in 1911 was 11,400,000 rubles.¹ A considerable part of this amount was spent for agricultural education, both elementary and secondary. The zemstvos are very active in this work, the number of schools founded and maintained by them rivaling that of the government schools.

LEGISLATION FOR AGRICULTURAL SCHOOLS.

The act of 1904 on agricultural education constitutes the basis of the organization of the agricultural schools. This act places all private schools of this kind under the supervision of the ministry of agriculture and imperial domains,² providing at the same time for the maintenance of schools controlled directly by that ministry, and for a considerable part of the support of private schools, the zemstvo schools being included in the latter class.

The act contains some special inducements for the encouragement of private initiative in the establishment of new schools. It declares:³

To agricultural schools, independently of their sources of maintenance, may be leased, free of charge, farming and forest government lands necessary for housing the students and for the conduct of experimental farming. * * *

The act provides further:

The said schools may be furnished, free of charge, with lumber from government forests for the erection of their buildings and for the repair of the same, as well as for heating, according to regulations established by the minister of agriculture and imperial domains.

Agricultural schools, ministerial as well as private, are exempted by the act from import duty on any books or educational material imported from abroad, and they are granted free use of mails within the Empire.

The agricultural schools are divided by the act into three classes, lower or primary, middle or secondary, and higher schools. The

¹ The exchange value of the ruble is 51.5 cents.

² Now called "general office of land management and agriculture."

³ Collection of data on agricultural education, 14th issue; see Bibliography.

higher schools are subject to special regulations, not included in the act. The secondary schools are defined by the act as "having for their object the furnishing to students of a practical agricultural education, based on scientific principles, in order to prepare them for agricultural work." The higher primary schools are described as "established for preparation for practical farming," and the elementary schools as having for their object the "preparation, mainly by practical instruction, of men informed and skilled in respect to farm work."

In the elementary division are also included "practical agricultural schools," limited to certain special agricultural branches, such as gardening, vine culture, wine making, butter making, and caring for cattle. These practical schools are intended to prepare trained laborers in the branches enumerated.

The primary schools are naturally limited in scope by their short course and by the necessity of giving the students general elementary education. These schools are very numerous and are an excellent means of popular education, since they attract more peasant children than any other primary schools. From different reports and opinions it appears, however, that the primary agricultural schools of Russia are in the experimental stage, and their usefulness is still a matter of question.

The secondary schools represent the normal type of technical schools, like those established in Germany and other western European countries. They are organized and managed admirably. Some of them have existed a long time; the Moscow school, for example, was founded in 1822. These schools have a curriculum of wider scope than is necessary for the purely practical instruction of peasant youths in modern farming. Only a small part of their graduates ever return to farming on a small scale, while many become managers of larger estates, government officials, teachers, etc. Still, these schools help to diffuse the new ideas in agriculture among the population in an indirect way. Located in the country, often in the immediate neighborhood of a number of small peasant farms, they attract the attention of the peasantry to their experimental fields, the imported breeds of cattle and horses, the use of modern machinery and scientific methods. The Russian "moujik" has keen observation and is imitative. He therefore readily adopts the methods whose successful application strikes his eye. In many cases the schools maintain breeding centers for the improvement of the local breeds of cattle.

Another important function of the secondary schools is that of furnishing teachers to the primary schools, which multiply very rapidly.

MAINTENANCE OF AGRICULTURAL SCHOOLS.

The most important government activity in agricultural education is that developed through the channels of the department of agriculture. A glance at the figures representing the annual disbursements of the State for this purpose gives a suggestion of the importance attached to agricultural education in Russia. The following table shows that the increase in the government provision for agricultural schools controlled by the department was 2,010,880 rubles within the period 1907-1911, and that it progressed yearly as follows:

Years.	Annual appropriation.	Annual increase.
	Rubles.	Rubles.
1907.....	1,873,471	
1908.....	2,052,330	178,859
1909.....	2,261,907	209,577
1910.....	2,926,834	664,927
1911.....	3,884,351	957,517
Total increase.....		2,010,880

The few agricultural schools coming within the province of the ministry of public instruction are classified as technical. With the exception of some scanty references, no separate data for them can be gathered from the official reports. It will be interesting, however, to note the relative importance of the educational activity of the department of agriculture as shown by the following comparison: The entire amount contributed by the treasury toward the maintenance of the technical schools under the supervision of the ministry of public instruction amounted to 2,689,907.67 rubles in 1912.¹ This total included nearly one and a half million rubles expended on higher technological institutes; it also included a certain amount corresponding to the expenditure for several agricultural schools. The department of agriculture in 1911 expended 3,884,351 rubles for agricultural schools alone.

SECONDARY AGRICULTURAL EDUCATION.

Admission of students.—There are at the present time 15 secondary agricultural schools in Russia. This number appears far too small to meet the popular demand. At the beginning of every year there is an enormous number of applicants, exceeding the number of vacancies, so that pupils must be accepted by competitive examination. The preparation required of these competitors is equal to the

¹ Report of the minister of public instruction for 1912; see Bibliography.

first two years of gymnasium or a full course of primary two-class schools.

Social class of students.—Because of lower tuition fees these schools attract the children of peasants and other poor classes in a larger proportion than the other secondary schools. By the latest available statistics, the percentage of pupils, according to social classes in the several agricultural schools is as follows:

Social class of parents.	Kherson Agricultural School.	Don Agricultural School.	Moscow Agricultural School.	Kazan Agricultural School.
Peasants.....	53	89	27	31
Burgbers.....	22	1	25	32
Merchants.....	12		8	5
Nobility.....	6	7	9	16
Other classes.....	7	3	31	14

It must be explained that the percentage of children of peasants and working classes in other secondary schools in Russia is comparatively low. According to official figures, quoted by the minister of public instruction in his report for 1912, 32.7 per cent or nearly one-third of the gymnasium pupils are scions of the nobility, while another third is composed of the sons of men ranking high in the social scale. Only 27.1 per cent of the pupils are children of burghers and artisans.

This tends to show how really democratic is the agricultural school in Russia in comparison with other divisions of secondary education.

Free scholarships.—While as a rule the pupils of the secondary schools are required to pay nominal tuition fees, the poorer children are aided by scholarships from various private foundations and from government provisions for that purpose. The number of beneficiaries is naturally limited by the amount of available funds. Those who desire to obtain a free education must not only prove that they are poor, but also show by their good behavior and excellent progress in studies that they are deserving.

In the four secondary agricultural schools whose printed reports are available the relation of the number of students with scholarships to the total number of students is as follows:

	Kherson Agricultural School.	Don Agricultural School.	Moscow Agricultural School.	Gorki Agricultural School.
Number of students.....	119	116	266	173
Number of scholarships.....	13	33	18	49

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Statistics.—Preliminary to considering the operations of this important class of agricultural schools it will be well to have in mind certain salient facts regarding them which may best be shown by the latest official statistics as summarized in the following tables:

SECONDARY AGRICULTURAL SCHOOLS.

[Compiled from statistics of the Department of Agriculture for 1909.]

Schools.	Date of foundation.	Number of instructors.	Number of students (Jan. 1, 1910).	Annual expenditure.	Value of school property.
				Rubles.	Rubles.
Gorki Agricultural School.....	1840	16	149	56,630	296,118
Kazan Agricultural School.....	1864	10	118	52,930	190,400
Mariinsk Agricultural School.....	1865	12	139	67,227	179,839
Kharkof Agricultural School.....	1863	14	151	55,035	218,082
Uman Agricultural School.....	1844	21	194	108,922	1,161,940
Moscow Agricultural School.....	1822	26	277	76,861	132,418
Kherson Agricultural School.....	1874	9	128	76,172	114,294
Bobroditskoye Agricultural School.....	1898	17	133	61,264	96,768
Bamars Agricultural School.....	1900	11	166	71,100	129,798
Basmarskian School of Viticulture.....	1894	7	36	34,192	322,214
Pakov Agricultural School.....	1902	15	113	54,798	119,080
Don Agricultural School.....	1907	14	113	47,177	121,164

In 1902.

The following table gives a detailed view of the different sources contributing to the maintenance of secondary agricultural schools in Russia:

SOURCES OF MAINTENANCE OF SECONDARY AGRICULTURAL SCHOOLS IN RUSSIA.

(Compiled from official statistics of the Department of Agriculture, 1909.)

Schools.	State treasury.	Zemstvo and other taxes.	Public institutions.	Private persons.	Interest from capital.	Income from school properties.	Tuition fees.	Other sources.	Total.
Basmarskian School of Viticulture.....	33,497				133	4,000	2,750		40,380
Bobroditskoye Agricultural School.....	64,601	18,000				7,246	16,730		106,677
Gorki Agricultural School.....	83,401				712	21,123	7,832		113,068
Don Agricultural School.....	41,133		19,369			118	41,190		101,810
Kazan Agricultural School.....	69,089				372	10,228	105	9,062	78,866
Mariinsk Agricultural School.....	127,928				380	28,185			156,493
Moscow Agricultural School.....	23,129		11,496				42,125	52	76,804
Pakov Agricultural School.....	77,341	8,000			45	8,834	2,192		96,412
Bamars Agricultural School.....	44,700	22,500				9,667	26,843		108,610
Uman Agricultural School.....	186,602		9,146				95,651		271,299
Kharkof Agricultural School.....	68,627								68,627
Kherson Agricultural School.....	9,468	63,312			2,611		5,061		80,452
Total.....	799,416					464,972			1,264,388

PROGRAMS.

Courses of study.—The course of study for the secondary agricultural schools covers six years, the sixth year being almost entirely

devoted to practical occupations and work in experimental fields. The following is a typical program, that of the Don Agricultural School, as printed in the report of the school for the year 1911:

First year:	Hours weekly.	Second year:	Hours weekly.
Religion	2	Religion	2
Russian language	5	Russian language	5
German language	5	German language	5
Geography of Europe	2	Geography of Russia	2
History, universal	3	Universal history	1
Arithmetic	2	History of Russia	2
Algebra	3	Algebra	3
Geometry	3	Geometry	3
Drawing	2	Drawing	2
Third year:	Hours weekly.	Fourth year:	Hours weekly.
Religion	2	Religion	1
Russian language	3	Russian language	3
German language	2	German language	2
Universal history	1	Trigonometry	2
History of Russia	1	Drawing	1
Algebra	1	Zoology	2
Geometry	2	Anatomy and physiology of animals	2
Drawing	2	Anatomy of plants	2
Zoology	2	Physiology of plants	1
Botany	3	Chemistry	2
Chemistry	3	Physics	2
Physics	3	Mineralogy and geology	1
Mineralogy and geology	2	Science of soils	3
		Mathematical geography	1
		Horticulture	2
Fifth year:	Hours weekly.	Sixth year:	Hours weekly.
Religion	1	Agriculture	3
German language	2	Zootechny	4
Drawing	1	Farm economy	6
Chemistry	2	Agricultural technology	2
Meteorology	1	Agricultural machines and general mechanics	2
General agriculture	3	Geodesy	2
General zootechny	4	Building	2
Farm economy	6	Survey of farm industry	1
Agricultural technology	2	Law	2
Agricultural machines and general mechanics	2	Veterinary medicine	1
Geodesy	2	Forestry	1
Survey of farming industry	1		

The general subjects taught in the secondary agricultural schools have nearly the same scope as in the gymnasia. Absence of Latin and Greek is a noteworthy feature. Much stress is laid on the German language which, owing to the scarcity of Russian scientific and technical literature, is an indispensable means of thorough technical education in any branch.

Practical training.—The most interesting subjects are those relating to the special or practical occupations of the students. Some of the schools have issued very complete and coherent reports, and from these it is possible to reconstruct the agricultural school life in all its phases.

Almost all these institutions belong to the type of boarding schools, and the occupations of students throughout the day are determined by school rules. Even the vacation time is utilized for different farm occupations which meet the natural inclination of growing boys toward activity and physical exercise and are in no way oppressive.

The report of the Kherson Agricultural School for 1911 gives the following information on the practical occupations of students during the year:

During the year the practical occupations of the students consisted of work in the field and about the farm with a view to acquiring skill in the work and in handling agricultural machines and implements.

During the year the students performed the following work: Plowing, harrowing, sowing by machines, and operating harvesters and machine rakes. They also cut hay and grain with scythes, carted it off, and stored it. They worked at threshing machines, sorted grain, cultivated crops by hoeing, interplowing, and mulching, attended to young forest plantings, cleaned the cattle yard twice daily and curried the cows, prepared feed and fed it to the animals. They also attended in turns to the business affairs of the farm and to raising live stock.

During the school year, that is, from September 1 to the date of the examinations for promotion, the grades took their daily turns in field work by the following scheme: Monday, sixth grade; Tuesday, fifth grade; Wednesday, fourth grade; Thursday, third grade; Friday, second grade; Saturday, first grade.

From the date of the examination, May 5, the students worked on the plan of practical occupations, usually two or three grades at a time. The students of the remaining grades studied geodesy, botany, zoology, entomology, agricultural mechanics, and other subjects, or they worked in the orchard, truck garden, or apiary.

The students of the sixth grade do not take part in the summer occupations, because immediately after the examinations they depart to different model farms for practice.

The period of summer occupations lasted until the completion of thrashing. The students were released for summer vacations on July 20.

During the school year the farm occupations of the students begin at 8.30 a. m. and continue until 1.30 p. m., with a 40-minute interval for lunch, from 11.20 to 12 o'clock. After dinner the students work from 3 p. m. to 5 or 6 p. m., according to the time of the sunset. In the summer the work is carried on according to the following plan:

Rising in the morning.....	5.30 a. m.
Morning prayer and tea.....	6.00 a. m.
Beginning work.....	6.30 a. m.
Breakfast.....	9.00 a. m.
Work.....	9.30 a. m. to 11.30 a. m.
• Dinner and rest.....	11.30 a. m. to 3.30 p. m.
Work.....	4.00 p. m. to 7.30 p. m.
Evening tea and supper.....	8.00 p. m.
Assignment of work for the next day.....	8.30 p. m.
Prayer.....	9.10 p. m.

The supervision of the students' work and rating it belongs to the farm manager and his aid—the farmer. Every night the farm manager apportions the work among the students whose turn it is to work the next day. In this he is guided by the following considerations: (1) That students assigned for the same kind of work be equal in age and physical development; (2) the number of students to do a given work must be large enough to complete the work assigned to them in one day without excessive fatigue; (3) the individual groups of students should not be scattered in the field, but work in proximity to one

another, in this way facilitating the inspection; (4) the students should, as far as practicable, take turns in the performance of different tasks, so that each of them may pass through all phases of farm work; (5) if the students have to perform a given work for the first time or have had little experience in it, all attention is directed toward the work itself with the view of developing in the students skill in the particular tasks required.

In fall, winter, and early spring, when there is little work to do in the field, the current work can usually be done by the students, who take their turns by grades; but in the rush of the spring planting, and especially in the summer, there is often an accumulation of work that requires the hire of additional day or piece laborers. In the summer the hardest work is assigned to the students of higher grades, while the younger boys are engaged in occupations of easier kinds.

EXCURSIONS.

Excursions are made by students to large farms which offer opportunities for observing the application to practical farming of the scientific methods taught in the school. These excursions form an interesting feature of the program of the secondary agricultural schools, and are designed to give the finishing touches to the boys' education. They are usually arranged for the higher grades.

One such trip is described as follows in the report of the Kherson Agricultural School:

This excursion, led by the manager of the school farm, was participated in by the students of the fifth grade, 13 in number, who went by steamer up the Dnieper River. By a prearranged plan, the first place visited was the "Cossack estate" of Prince P. N. Tronbetskoy. The excursionists began their journey at 11 a. m., June 9, and at 3 o'clock in the afternoon arrived at the "Kozatskoye." After a repast and a little rest they visited the farm buildings, vineyards, and wine pressing and fermentation plant connected with large wine cellars. The manager of the plant, a specialist in wine production, gave the students a very interesting lecture on this subject. The next day the manager of the estate conducted the excursionists about the farm grounds, covering an area of 27,000 *desiatines* (72,900 acres). The inspection of this vast territory occupied the entire day. At 2 o'clock the next morning they started on a further journey up the river. The next place visited was the estate of Grand Duke Nicholas Mikhaylovitch, covering an area of over 70,000 *desiatines* (189,000 acres) of land located in the Provinces of Tavrichesky, Yekaterinoslav, and Kherson.

About 11 a. m. the excursionists landed in the harbor of Bolshaya Lepetikh, where a number of carriages, sent from the estate, were already waiting for them. They covered the distance of 30 *vershs* (20 miles) to Rogatshitskaya, where the administration of the property is centered, in four hours, arriving there at 3 p. m. The remaining part of the day was utilized for a tour around the administration grounds and shops. Among the implements of the estate attention was attracted to a plow drawn by a steam tractor, which the students saw for the first time. The next morning they visited the great horse-breeding establishments of the estate, which presented many interesting features. At noon the excursionists were transported to Groushevskaya, the home of the central management of the estate. Before the night set in they had enough time to see some cultivated fields, particularly the experimental grounds, which were very interesting. The following day the students looked over the remain-

ing part of the estate. They visited the distillery which produces alcohol mainly from corn, of which a great quantity was raised on the place. They inspected the sheep-breeding establishments, which were in a perfect state of management. They also viewed the experimental grounds of the Yekaterinoslav provincial "zemstvo," established mainly for the purpose of trying out different kinds of corn and sorghum.

The following day the excursionists visited Annovka, the property of Count Kotchubey, located in Upper-Dnieper County of the Province of Yekaterinoslav.

This estate is famous for its thoroughbred gray Ukrainian cattle. Much attention is given to raising corn, alfalfa, and hay grasses. The inspection of the Annovka estate was completed before the end of the day, and on the day following the students set out for Kladovaya station, where they boarded a train for Onoufrieвка, a large place, belonging to Count M. M. Tolstoy. On this estate the excursionists spent two days. They saw the perfectly cultivated farm grounds, forest plantings, brick works with a Hoffman furnace, and the horse-breeding establishments. The next place visited was Trostianetz, located in the province of Kharkoff. A delay of seven hours between trains was utilized for a sight-seeing tour in Kharkoff, 20 *verssts* distant from the Liubotin station.

The Trostianetz estate is located in Akhtyrsky County, Province of Kharkoff, close to the Smorodino Station of the Southern Railway. It is a large place, covering an area of 22,000 *desiatines* (59,400 acres). The most important crop cultivated is sugar beets. The other crops were also in a fine condition, especially the winter wheat and hay-producing grasses. In Trostianetz the excursionists stayed for one day and a half, visiting the sugar factory, lumber mill, parquetry mill, and a large forest estate with model artificial plantings. They also inspected the dairy, where there are over 100 cows of Swedish breed.

On June 20 the excursionists started from Trostianetz for their home in Kherson, where they arrived at 10 a. m., June 21.

The excursions reported by other agricultural schools were arranged in a way closely similar to that just described. They seem to be a part of a strictly defined demonstration system, supplementary to the school instruction, and, like everything else, are carried out with precision.

TRAINING OF TEACHERS.

In connection with some secondary agricultural schools there have been established pedagogical courses whose object is to prepare teachers for primary agricultural schools.

A very interesting report, which incidentally throws light on the origin of these courses, is contained in a publication entitled, "Information on the Establishment and Subsequent Reforms of Pedagogical Courses at the Kharkoff Agricultural School."¹ It appears that the initiative in this movement belonged to the ministry of agriculture and imperial domains, which is so prominently identified with agricultural education in Russia.

¹ See bibliography.

The report explains the conditions that gave rise to the pedagogical courses as follows:

Pedagogical courses at the Kharkoff Agricultural School were established in the year 1896 for the purpose of giving instruction in special subjects and natural history to teachers of primary agricultural schools.

The rapid growth of these primary schools caused a demand for instructors having sufficient preparation to teach agricultural subjects in them. As there was no institution for the preparation of such teachers, the ministry of agriculture and imperial domains found it advisable to establish temporary courses of short duration for the purpose of preparing graduates of the secondary agricultural schools for the work of teachers. With this object in view, in 1894, the minister issued a circular to all the agricultural schools, proposing, in a tentative way, to establish pedagogical courses in connection with some of the secondary agricultural schools.

The pedagogic council of the Kharkoff Agricultural School, having considered the proposed plan from the technical as well as from the economical point of view, presented its opinion to the department of agriculture in October of the same year.

In January, 1895, the plan of organization of pedagogical courses had already been worked out and, together with other circumstances pertaining to the local conditions of the Kharkoff School, it was subjected to full deliberation. The director of the school was requested to present to the department of agriculture a statement regarding the foundations on which the courses would be based, as well as estimates of the initial and subsequent annual expenses that would be necessary for the establishment and maintenance of such courses. Directed by the instructions of the ministry and by the conclusions of the pedagogic council and having himself gathered much information pertaining to the subject, the director presented to the department in June, 1895, his project and estimates covering fully not only the organization of pedagogical courses, but also of a primary agricultural school in connection with the courses.

On December 20, 1895, the ministry accepted the project and issued a set of regulations for the proposed courses.

They were defined as "Courses for the preparation of teachers for lower agricultural schools," and were placed under the control of the ministry of agriculture and imperial domains. The duration of the courses was to be one year, the number of students was limited to 10, and the preparatory education required was covered by higher or secondary agricultural schools, including the additional year of practical employment on private farms. Persons who had had three years of actual teaching in one of the special subjects in primary agricultural schools were also accepted, without regard to their previous education.

The students were obliged to sign a pledge to serve at least three years as teachers after the completion of the courses, or to return the amount that the Government had spent for their education. The courses were managed by the director of the Kharkoff Agricultural School, aided by the pedagogic council, composed of the teachers of the courses and presided over by the director.

In accordance with these regulations the students are examined by a commission of teachers under the presidency of the director. The practical examination consists of two trial lessons, one on a subject selected by the student and another on a subject selected by the commission. Some of the students who have passed the examination may be assigned by the ministry to the best elementary agricultural schools for additional practical training.

The following subjects compose the curriculum of the pedagogical courses: (1) General pedagogy, didactics, and methods of teaching agricultural subjects and natural history in application to farming; (2) agriculture and animal industry in a wider scope; and (3) practical occupations. These practical occupations consist of: (a) Tutoring individual students of an agricultural school or any other special school selected for this purpose; (b) participation in practical occupations in agriculture and its branches; (c) experimental lessons on natural science and agriculture under the supervision of the teachers; (d) discussions following the lessons, participated in by all the students present, under the direction of the teacher; and (e) making collections of illustrative material. The students also make excursions to private farms and perform tasks in agricultural economies.

The courses were established in January, 1896, and were continued up to 1900 on a temporary basis. Their usefulness having been demonstrated by actual experience and indorsed by numerous educational institutions, associations, and congresses, the ministry of agriculture and imperial domains decided to make them permanent. The minister submitted to the council of state (cabinet of ministers) his project for placing the curricula on a permanent basis. The council of state, by a resolution passed on November 27, 1900, adopted the proposal and provided for the maintenance of the courses already in existence at the Kharkoff Agricultural School to the amount of 5,800 rubles annually.

In the year 1912 an important reform was instituted in the pedagogical courses. Review courses in zoology, botany, mineralogy, chemistry, and physics were introduced; farm economy was included in the number of regular subjects; and the scope of the practical occupations was extended. For the purpose of giving the students better and more complete practical training there was also established, in connection with the courses, a primary agricultural school, in which all teaching and direction of practical tasks was to be done by the students.

The system of stipends was modified so that, instead of merely cash, the students received room and board and a smaller amount of money than formerly.

Owing to these important changes, the expenses of the courses were almost doubled, and accordingly the annual grant of the ministry was raised, starting with the year 1912, to 11,600 rubles.

BESSARABIAN SCHOOL OF VITICULTURE AND WINE MAKING.¹

The Bessarabian School of Viticulture and Wine Making, though classed as a secondary agricultural school, has a distinct organization and a special purpose, and therefore is well worth a separate study. It has for its aim, as the name suggests, the preparation of specialists and managers for vineyards, wine factories, and wine cellars.

The school is located in Kishinev, in the Province of Bessarabia. It was established in 1894 and reorganized in 1911 in conformity with the act of 1904 on agricultural education. In January, 1910, the total number of its students was 46.

The course of instruction covers five years, the first year being devoted to general subjects and the remaining four to special subjects pertaining to fruit farming and viticulture. The following subjects are taught: Religion; physics and meteorology; natural history; geodesy and drawing; chemistry; science of soils; knowledge of machines and implements used in horticulture, viticulture, and wine making; fruit farming; viticulture; wine making and manufacture of by-products; wine-cellar keeping; organization of vine and fruit farming; bookkeeping; and law.

The preparation required of new students corresponds to the course of "two-class" county schools or other schools of similar scope, including the primary agricultural schools. The high age limit for applicants for the first grade is 20 years for those subject to military duty, but for those exempt from military service there is no age limit. The minimum age limit is 16 years. Graduation takes place in the month of August, and new students are enrolled at the same time.

The tuition fee is fixed at 20 rubles annually. Boarding students pay 200 rubles annually. Fifteen scholarships are offered by the school, of which 10 are provided by the Government and 5 have been founded by the zemstvo.

The graduates of the Bessarabian School receive certificates upon completion of studies. To obtain the degree of viticulturist they are required to pass through three years of practice in vineyards or in wine-producing plants, and at the end of this term they must submit a certificate and a report of their occupations. Those receiving the degree of viticulturist acquire also the rights of personal honorary citizenship. Practice for a period of 10 years conveys the rights of hereditary honorary citizenship.

The holders of the degree of viticulturist may occupy Government positions as teachers of viticulture and wine making in primary schools of this kind, as practical instructors in viticulture, as wine experts, cellar managers, etc.

¹ From the "Collection of data on agricultural education," 16th issue.

The school is provided with laboratories, a museum, a wine cellar, vineyards, a fruit orchard, an experimental farm, and two libraries. Its territory covers 73 acres, divided into plots, as follows: Buildings, 18 acres; park, 8 acres; vineyard, 37 acres; fruit orchard, 8 acres; truck garden, 1.3 acres; tree school, 0.7 acre; and waste land, 5 acres. The value of the school property was estimated in 1911 at 327,122 rubles, including the land, which was valued at 13,002 rubles.

OPPORTUNITIES FOR HIGHER AGRICULTURAL EDUCATION.

Graduates of secondary agricultural schools may continue their education in higher agricultural schools, where they are accepted without examination. Whenever, owing to an unusual influx of candidates, there is an entrance examination, the graduates of agricultural schools are given preference over the graduates of other secondary schools.

Graduates of the Viticultural School are given an opportunity to continue studies in their special branch by entering the higher viticultural courses in Yalta, Crimea.

The agricultural education act of 1904 gives the agricultural students certain privileges relating to military service. They are permitted to continue their studies after they have passed the age of conscription, which is 21 years, until the completion of the school program, but not after 24 years of age.

RECENT OPINIONS REGARDING AGRICULTURAL SCHOOLS.

Complaint has been made in Russia that the agricultural school has failed to accomplish its original purpose—to educate the peasant class in progressive methods of farming. It has been charged that the schools are filled mostly with the children of nonagricultural classes, and that, instead of applying the knowledge acquired in improving native farming, these students, or at least a majority of them, later engage in other pursuits in no way connected with agriculture. Hence some doubt has been aroused regarding the advisability of burdening the State and local communities any longer with heavy expenditures for agricultural education for children who would receive as much benefit from general schools and at less expense.

Similar complaints were heard in other European countries, as well as in the United States, during the experimental stage of this movement. They reached an acute stage in Russia in 1908, when certain statesmen and educators went so far as to advise that the schools be closed unless some way of improving conditions was found. As a consequence of this agitation D. M. Bodisko was delegated by the ministry of agriculture and imperial domains to investigate the ag-

ricultural schools. After his tour of investigation he submitted a report, in which he said:¹

It is evident that there are deficiencies in the management of agricultural schools. The common people—the peasants—do not go to school, consequently the institutions of learning are filled by half-educated persons, who swarm in to take advantage of free tuition and to receive diplomas.

Formerly these students filled, to some extent, positions on large estates. But at the present time, when the large estates are on the verge of extinction, the graduates of agricultural schools try to engage in other occupations that have nothing in common with agriculture.

Even the primary agricultural schools were, in the opinion of Mr. Bodisko, far from successful in peasant education. The most important obstacle with which these schools had to cope was the custom of the peasants to use their children for farm work in the summer. Naturally, this prevented their attendance at school during the most useful period.

Notwithstanding these conditions, this expert investigator declared:

The State can not do without good agricultural schools and without practical teaching of agriculture. Such schools will, for a long time, be insufficient to meet the needs of the peasant class and the quotas of students will be composed of various nonagricultural classes. While it is true that these students will never work their own farms, still, in one way or another, they will disseminate agricultural science among the people.

More recent discussions and reports show that doubts of the actual value of agricultural schools were more in the nature of transient disappointment than of serious dissatisfaction. The view of Mr. Bodisko that these schools, notwithstanding their defects, will for a long time to come "disseminate agricultural science among the people in one way or another" has been shared by the Russian authorities in charge of the work. This is indicated by the fact that the number of agricultural schools increased from 213 at the time of the investigation to 281 in 1912.

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